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6 June 1965

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ROCKET MOTOR TEST FACILITY  
BIYSK, USSR

1. FIRST IDENTIFICATION OF THIS FACILITY WAS ACCOMPLISHED BY [ ] 25X1
- [ ] THE TEST FACILITY WAS LOCATED SW OF BIYSK ON THE NORTHERN 25X1
- SIDE OF THE BIYSK EXPLOSIVES AND PROPELLANTS PLANT. IT CONTAINED
- TWO COMPLETED HORIZONTAL TEST CELLS, WITH ASSOCIATED CONCRETE
- PAVED DEFLECTORS, A SHELL TESTING RANGE, AN H-SHAPED BUILDING, AND
- SEVERAL OTHER SUPPORT BUILDINGS. A GROUP OF THREE OFFSET BUILDINGS
- WAS OBSERVED EAST OF THE TEST FACILITY.

THIS SITE PROVIDED THE FIRST SIGNATURE OF THIS TYPE TEST FACILITY

AND SUBSEQUENTLY 4 OTHER SUCH FACILITIES WERE IDENTIFIED AT STERLITAMAK,

KRASNOYARSK, PERM AND KAMENSK-SHAKHTINSKIY. A SIXTH FACILITY,

PRESENTLY UNDER CONSTRUCTION, CONTAINING A NEW TYPE L-SHAPED BUNKER

HAS BEEN IDENTIFIED AT KEMEROVO.

2. REANALYSIS OF EARLIER PHOTOGRAPHY REVEALED THE FACILITY WAS IN THE
- EARLY STAGE OF CONSTRUCTION IN DEC, 1960. SIX SUBSEQUENT MISSIONS
- BETWEEN DEC 61, AND NOV 62, REVEALED THAT CONSTRUCTION OF THE H-
- SHAPED ASSEMBLY AND CHECK-OUT BUILDING WAS FIRST OBSERVED IN DEC 61,
- AND THE BUILDING WAS SUBSEQUENTLY COMPLETED BY JUN 62. ON DEC 61
- PHOTOGRAPHY, 2 HORIZONTAL TEST CELLS WERE OBSERVED UNDER CONSTRUCTION

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AND SUBSEQUENTLY TEST CELL 1 WAS COMPLETED BY JUN 62, AND TEST CELL 2 WAS COMPLETED BY SEP 62. JUN 62, PHOTOGRAPHY ALSO REVEALED A NEW SECURED AREA IN AN EARLY STAGE OF CONSTRUCTION 8,775 FT NW OF THE TEST FACILITY; IT WAS IDENTIFIED AT THAT TIME AS A POSSIBLE BURN AREA.

3. EIGHT SUBSEQUENT MISSIONS REVEALED THE ADDITION OF 3 SETS (TOTALING 12) OF OFFSET BUILDINGS AND THE IDENTIFICATION OF THESE BUILDINGS AS TEMPERATURE CONDITIONING BUILDINGS. BY LATE 1964, ALL RAIL AND STEAM LINES SERVING THE TEST AREA AND ADJACENT TEMPERATURE CONDITIONING BUILDINGS WERE COMPLETE. CONSTRUCTION OF THE SECURED AREA NW OF THE TEST SITE WAS COMPLETED IN LATE 63, AND THIS AREA WAS IDENTIFIED AS A TEST POSITION IN FEB 65, WHEN A BLAST SCAR WAS OBSERVED IN THE SNOW. THE FIRST EVIDENCE OF TESTING AT THE TEST FACILITY WAS IN MAR 65, WHEN DISCOLORATION ON THE PAD OF TEST CELL 2 WAS OBSERVED.
4. WITHIN THE ADJACENT BIYSK EXPLOSIVES AND PROPELLANTS PLANT, (NOT SHOWN ON GRAPHIC) FACILITIES ASSOCIATED WITH THE MANUFACTURE OF DOUBLE-BASE SOLID PROPELLANTS, AND THEIR CASTING AND CURING INTO ROCKET MOTORS HAVE BEEN IDENTIFIED. THE CONSTRUCTION OF THESE SPECIAL FACILITIES HAS OCCURED CONCURRENT WITH THE DEVELOPMENT OF THE TEST AND TEMPERATURE CONDITIONING FACILITIES.

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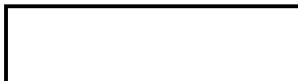
5. A METHOD OF THRUST ANALYSIS FOR THESE TEST CELLS WAS DERIVED BY FTD BY UTILIZING THE DISTANCE FROM THE END OF THE TEST CELLS TO THE FRONT (IMPINGEMENT POINT) OF THE BLAST DEFLECTOR, AND APPLYING GENERAL GAS EXHAUST STAGNATION PRESSURE RELATIONSHIPS. THE THRUST ASSESSMENTS OF THE TWO BIYSK CELLS ARE THEORETICALLY FOR THE LARGEST SINGLE ROCKET MOTOR THAT COULD BE FIRED FROM THE TEST CELL WITHOUT SEVERELY ERODING OR DESTROYING THE BLAST DEFLECTOR. THE ESTIMATED SEA LEVEL THRUST FOR THE BIYSK TEST CELLS ARE:

TEST CELL 1 - 125,000 LBS

TEST CELL 2 - 240,000 LBS

IT IS POSSIBLE, HOWEVER, TO CLUSTER TWO OR MORE OF THESE MOTORS WITHOUT AFFECTING THE PRINCIPLE OF THE THRUST ANALYSIS.

6. THIS MISSION REVEALS THAT DISCOLORATION OF THE PAD AND A SMALL SMOKE CLOUD OVERHANGING TEST CELL 2 INDICATES THE LIKELIHOOD OF A RECENT TEST. SLIGHT DISCOLORATION OF THE PAD AT THE TEST SITE (NOT SHOWN ON GRAPHIC) INDICATED ADDITIONAL TEST ACTIVITY. IN THE TEMPERATURE CONDITIONING AREA, 4 BUILDINGS AND EXCAVATIONS FOR 2 OTHERS ARE UNDER CONSTRUCTION AND A NEW BUNKERED BUILDING ARE OBSERVED SINCE



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